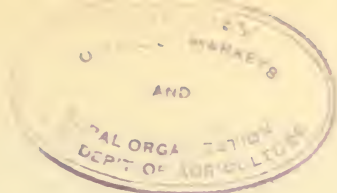


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OFFICE OF THE SECRETARY—CIRCULAR NO. 58.

REPORTS OF DRS. VERANUS A. MOORE, MAZŸCK P. RAVENEL, AND WILLIAM T. SEDGWICK UPON THE FEDERAL MEAT INSPECTION.

NOTE BY THE DEPARTMENT.

In July, 1913, the Secretary of Agriculture, wishing to obtain the opinions and recommendations of experts outside of the department with regard to the meat-inspection service as carried on by the Bureau of Animal Industry, requested the following-named gentlemen to investigate the work at the places respectively indicated and to report to him:

J. W. Connaway, D. V. S., professor of veterinary science in the College of Agriculture, University of Missouri, Columbia, Mo., to investigate the meat inspection at National Stock Yards (East St. Louis), Ill., St. Louis and St. Joseph, Mo., and Kansas City, Kans.

Veranus A. Moore, M. D., V. M. D., dean of the New York State Veterinary College and professor of comparative pathology and meat inspection, Cornell University, Ithaca, N. Y., to investigate the meat inspection at New York and Buffalo, N. Y., and Philadelphia and Pittsburgh, Pa.

MazŸck P. Ravenel, M. D., professor of hygiene in the University of Wisconsin and director of the Wisconsin State Laboratory of Hygiene, Madison, Wis., to investigate the work at Milwaukee, Wis., Chicago, Ill., Indianapolis, Ind., and St. Paul, Minn.

William T. Sedgwick, Ph. D., Hon. Sc. D., professor of biology and public health and director of the sanitary research laboratory and sewage experiment station of the Massachusetts Institute of Technology, Boston, Mass.; also a member of the advisory board of the hygienic laboratory of the United States Public Health Service; to investigate the meat inspection at Boston and Worcester, Mass., and New Haven, Conn.

The letters of appointment by the Secretary contained the following statement:

With a view to safeguarding public health and maintaining the highest degree of efficiency in the meat-inspection service of this department, it is my desire that you report directly to me fully and frankly the conditions as you find them at the various packing establishments, together with such recommendations looking to the improvement of the service as in your judgment may seem best.

Personal affairs made it impossible for Dr. Connaway to serve, but the others investigated and studied the inspection service in the course of the next few months. It was the Secretary's desire that the investigators, if possible, exchange views and collaborate in a joint report. As Dr. Sedgwick was preparing to go abroad, he made a separate report on March 1, 1914. After the lapse of some time, during which it was hoped that Dr. Connaway might be able to take the part desired of him, and after further delay due to other circumstances, Drs. Ravenel and Moore submitted their joint report under date of October 9, 1915. These reports follow:

REPORT OF DR. SEDGWICK.

I beg leave to report that acting under your letter of appointment and instructions, dated July 7, 1913, I have visited and carefully inspected the sanitary conditions affecting or likely to affect the public health in the principal packing houses engaged in interstate commerce at New Haven, Conn., and Worcester, Mass. In each city there is one principal slaughterhouse besides various establishments devoted to the smoking, packing, cutting, packing, and distributing of meat products. There is also under inspection in each city one detached rendering plant dealing chiefly with market waste and comprising under one roof carefully separated rooms and apparatus for rendering such waste into edible or into inedible materials.

I first made a general survey of the sanitary conditions surrounding the killing, dressing, cutting, and packing processes. I inquired into the water supply, the drainage, the methods of heating, lighting, ventilation, the physical conditions of floors, walls, cellars, etc. I considered matters of general cleanliness, of the health of the employees, of toilet facilities, and of the cutting, preparing, handling, packing, and shipping of the various products. These and similar inquiries I understand to be embraced under that portion of my instructions referred to as "conditions."

In the second place, and finally, I have observed closely the actual conduct of the work of inspection and in particular the character and efficiency of the personnel engaged in the inspection.

SANITARY CONDITIONS.

In New Haven and in Worcester the buildings are old but have been extensively reconstructed and are to-day reasonably well fitted and equipped for the work done in them. Hogs only are slaughtered in New Haven, and these arrive by train and, while awaiting slaughter, are housed under good sanitary conditions. The killing, the scalding, the scraping, and the eviscerating are all likewise done under reasonably good sanitary conditions. The floors, walls, benches, cooling rooms, cutting rooms, pickling and other storage rooms, the rooms in which sausages and luncheon loaf are made, the packing, salting, and shipping rooms are all in excellent sanitary and physical condition. Satisfactory measures appear also to be taken against flies and rats.

Reasonable care appears also to be used in the selection of healthy employees, and the toilet arrangements of the establishment are clean, well equipped, and sanitary. Their location, on the other hand, in New Haven is objectionable, as all are on the top floor and hence

inconvenient for employees working on the lower floors. It is always of the very first sanitary importance to make resort to water-closets and hand-washing basins so easy and so convenient as to encourage habits of personal cleanliness. To this end hot as well as cold water should be freely accessible for hand washing. In New Haven the toilets are, as stated, on the upper floor, a somewhat inconvenient and, to this extent, objectionable location; but they are otherwise satisfactory and well appointed. At Worcester they are found on the various floors and are usually well ventilated and well appointed.

THE INSPECTION SYSTEM AND STAFF.

The system of meat inspection employed at the packing houses which I have visited has naturally the advantages and disadvantages of any inspection system, and I do not feel qualified either by training or experience to express an opinion on many of the technical points involved in its conduct or operation. I am, however, familiar with various other systems of sanitary inspection and I therefore feel competent to report upon certain features of this one.

I have observed closely the personnel of the inspecting staff and the personnel of the management or operating staff, and the reciprocal relation of these, together with the attitude of both to the work in hand. For, no matter what the physical environment, almost everything in work of this kind depends in the last analysis on the ability, faithfulness, and right attitude of those in charge. With an efficient and faithful personnel even a poor environment may be made to yield a good product, while with an incompetent or unfaithful staff even a model plant may turn out a poor product. Throughout the present investigation I was constantly impressed with the absolute and fundamental dependence of the results upon the interest, ability, and devotion of the personnel.

I was struck at the outset with the fact that the inspectors in charge are comparatively young men, energetic, and capable of hard work. The work which they have to do requires keen and unremitting attention often for hours at a time. Every carcass passes, almost literally, through their hands. Much of the work is done under wet, steaming, bloody, and otherwise disagreeable conditions. Much of it must be done rather quickly, and hence requires the closest concentration. The handling for hours of hot viscera sometimes makes the hands sore. Sharp knives must be constantly used and cuts are not rare, while a routine which is almost endless tends to deaden interest and dull the quickness of perception. For these and other obvious reasons such as the omnipresent possibility of temptations to indolence, carelessness, and even bribery it is plain that almost everything depends on the composition and character of the personnel. And here I am happy to be able to report that I have been impressed throughout by the obvious ability and apparent faithfulness of the inspecting staff. In the inspectors in charge at the stations visited I believe that the Bureau of Animal Industry possesses men of character, ability, and faithfulness. Of those under them I can say but little in detail, but as far as my observation went all are supported by competent and faithful assistants.

It is of course imperative if not indispensable that the inspecting staff should be on good terms with those managing and operating the

plant. And here by separate and special inquiry, I satisfied myself that the relations were such as ought to prevail. A steady yet reasonable pressure seems to be exerted upon the owners and managers to make improvements, and I repeatedly saw material repairs and improvements under way which had been suggested or required by the inspector in charge. Most of the packing houses or parts of them are old, but all are being improved or renewed, often at heavy cost. This is especially true at Worcester.

I believe, however, that the inspectors in charge at both New Haven and Worcester are overworked, and ought to be given more assistants of a high grade, so that they themselves might be able to supervise their territory more efficiently. I believe, too, that they are underpaid and that it would add immensely to the efficiency of the service if the more responsible men at least were less hard worked and better paid.

In conclusion I may say that, cut short by my illness as my investigation of the meat inspection service has been, I am nevertheless deeply impressed with its excellence, its usefulness, and its efficiency. It is everywhere admitted I think that the United States meat inspection is far superior to any provided by the States, and that these constantly look up to it as a model toward which they are striving. I believe that in this they are right, and that if the service could be strengthened and increased, it would be even more satisfactory than it now is.

WM. T. SEDGWICK.

REPORT OF DRS. RAVENEL AND MOORE.

The undersigned, who were appointed by you in July, 1913, to investigate and report upon conditions in meat-packing establishments under Federal inspection, have the honor to submit the following report:

In your letters of appointment you said:

With a view to safeguarding public health and maintaining the highest degree of efficiency in the meat-inspection service of this department, it is my desire that you report directly to me fully and frankly the conditions as you find them at the various packing establishments, together with such recommendations looking to the improvement of the service as in your judgment may seem best.

Dr. Moore was directed by you to investigate the work at New York and Buffalo, N. Y., and Philadelphia and Pittsburgh, Pa., and Dr. Ravenel that at Chicago, Ill., Indianapolis Ind., Milwaukee, Wis., and St. Paul, Minn.

We proceeded independently to investigate the establishments and the inspection service at the places assigned to us. Our inspections were made unannounced. As far as possible introductions were avoided, and we have reason to believe that for the most part the members of the meat-inspection force did not know that we were anything more than casual visitors. Certainly the majority of them did not know our names until afterward and many not at all.

As a result of our observations and study we unite in the conclusions and recommendations which follow. This report deals with the inspection as a whole rather than with the details of the work in the

various places. Following out the two principal ideas set forth in our letters of appointment, we found in general that—

1. The methods laid down in the regulations are sufficient for insuring wholesome meats and for the protection of the public health.
2. These regulations are honestly and efficiently carried out.

INSPECTORS.

For a number of years past we have come into contact with a large number of the men engaged in the Federal meat-inspection service, and in the prosecution of our investigations we have studied them as carefully as possible from every standpoint. We are convinced that as a class they are an earnest and conscientious set of men, showing a commendable sense of responsibility to the service and to the public.

In each of the cities the inspector in charge was found at work on the problems of his station. The veterinary and meat inspectors were at their respective places doing in a careful manner the work in hand. In no instance was the inspector absent when the work or the regulations required his presence. It is gratifying to be able to state that the veterinary and meat inspectors were found to be men interested in their work and of a personal appearance that bespeaks their best efforts in the service. In fact, they all seemed to be competent and to understand thoroughly their duties.

The monthly meetings of the veterinary and meat inspectors that are held at the different stations by the inspectors in charge for the purpose of better qualifying the men are to be highly commended. Their meetings have a threefold significance, namely, (1) educational, (2) in stimulating a pride in the service, and (3) in fixing in the mind of the inspector the importance of his task.

ANTE-MORTEM INSPECTION.

The ante-mortem inspection is usually made on the premises of the slaughterhouses but at some of the large stations it is done in the stockyards. In the latter case, in addition to the ante-mortem inspection under the meat-inspection law, there is usually an inspection under the quarantine law, at the time of unloading or soon afterwards, of all animals received at the yards. Under these circumstances there is a double and sometimes a triple ante-mortem inspection.

With the funds available it is manifestly impossible to employ men enough to detect any but the more obviously diseased animals in the yards. The significance of ante-mortem inspection has been exaggerated. We regard this yard inspection as being of more importance to the animal industry than to human health, since all of these animals, if slaughtered in houses which are under Federal inspection, undergo the regular detailed post-mortem examinations before being passed for food.

POST-MORTEM INSPECTION.

In each of the packing houses the post-mortem examinations were being made according to the regulations for passing or condemning carcasses. In no instance did we detect any neglect on the part of

the inspector in carrying out the regulations. The condemned carcasses or parts of carcasses were taken charge of by the inspectors and tanked as soon as the killing stopped, or they were placed under lock to be tanked later. There seemed to be a clear understanding on the part of the veterinary inspectors of the rules regarding the condemnation of carcasses. No infringement of the regulations on this subject was observed. The meat inspectors were likewise careful in their observance of the regulations relative to the inspection and condemnation of tainted, spoiled, or sour meats. We believe this inspection is thorough and sufficient to insure safe and wholesome meat.

In the newer houses the facilities for the post-mortem inspection as regards space, light, etc., are good. In some of the older houses, however, the business has increased beyond the normal capacity, and in these the position of the inspector, the space allowed, and the lighting were not satisfactory.

BUILDING, EQUIPMENT, AND SANITATION.

Regulations pertaining to the cleaning of floors and utensils were carefully observed. It must be remembered that the killing and dressing of animals can not be done without more or less blood and dirt. It is the uniform practice to clean up thoroughly after each killing period, and at no time is an accumulation of filth permitted. The metal, glass, tile, or wooden tables that are used were clean, as well as the cans, trucks, and other utensils used in handling the viscera, meat, and meat products. The requirements regarding floors, walls, light, etc., present difficult problems. In many instances new buildings have been or are being constructed. These are high class in every respect. Especially noticeable were the excellent "retaining rooms" for the final inspection of carcasses, which have been or are being constructed at many plants. These are invariably spacious, well lighted, and equipped with every convenience for making a thorough final examination. Each room is furnished with a table, the top of which is movable and built on the plan of a treadmill. Under the table is a tank of hot water, and after each examination, by the turning of a handle, approximately one-half of the table is immersed in hot water and sterilized while the other part of the table is being used. Consequently there is no danger of carrying any infection from a diseased carcass to one which may be passed for food. They are also well supplied with tanks in which the inspector can sterilize his knife between examinations, and no neglect was observed on the part of any inspector in using these conveniences.

In contrast with these are the older houses. They were built when the business was small and before modern improvements now considered to be essential were known. In most instances they began as small buildings and were added to until they became large in area, low between floors, and necessarily not well lighted nor ventilated. Many of these have been improved to the point where they satisfy the technical requirements of sanitation. This being the case, it is impossible to find just ground upon which to demand demolition and rebuilding. It is in many instances financially impossible for the owners to rebuild at once. The elimination of this class of houses must be a process of evolution. In some cities the improvements suggested by the inspectors in charge and costing several hundred

thousand dollars are in progress. With these improvements there is no reason why animals can not be slaughtered and their carcasses handled in a perfectly sanitary manner. It would seem that beyond this point refinements in construction and equipment will be brought about by competition and the necessity of efficiency in the business.

In our investigations especial attention was paid to the toilet facilities and to the rules and regulations concerning the care of them. There has been tremendous improvement in this regard. Many of the toilets are entirely separate from buildings in which work is done. In others they are part of the building but entirely disconnected from workrooms and have outside ventilation. The fixtures for the most part are modern and sanitary, and there is an abundance of water for flushing purposes. What has been said concerning the buildings applies also to the toilets. In the newer houses they are adequate and sanitary. In the older ones they are often deficient in these respects.

It is remarkable how much has been accomplished in bringing about sanitary conditions in the packing houses under Federal inspection since the law of 1906 went into effect. It is true that there are still many things to be done, but the spirit and the letter of the law are being observed in all of the establishments which we have inspected. This does not mean that perfection has been attained but rather that much progress has been made in overcoming the serious obstacles which confronted the enforcement of a satisfactory meat-inspection service. As the entire subject of meat inspection in this country is comparatively new, the improvements that have been made are actually greater than one would expect in the time. It is a case where teacher as well as pupils have had to learn. We have found procedures and equipment that were recommended a few years ago discarded for other and supposedly better methods and materials. To convince one of the great advances that have been made, it is but necessary to visit a local uninspected slaughterhouse and contrast the conditions found with those in Federal-inspected establishments.

SUGGESTIONS AND RECOMMENDATIONS.

The conditions found in the packing houses and branch establishments have suggested certain changes or modifications either in the regulations or in the procedure which it is thought might be beneficial to the service. In accordance with the request in your letter of instruction, the more important of these are set out below. However, the progress in the improvement of the service that is now being made should not be interrupted by changes of methods unless there is sufficient evidence that they will be beneficial. With this explanation, we submit the following:

1. *Sterilized meat.*—Because of honest differences of opinion relative to the extent to which a disease may exist in an animal and its flesh remain safe for human food, we recommend that a plan be adopted by which the carcasses of animals affected locally and moderately with tuberculosis, hog cholera, and other diseases and conditions, and that are now passed only for lard or tallow, can be sterilized with steam under the supervision of the inspector and sold as cooked meat. The process of sterilization would insure the wholesomeness of the meat, and a heavy waste of good food would be

avoided. This method has been followed for many years in Germany and Austria, where it is very welcome and has worked well. The meat is sold as second class at a lower price.¹

2. *Hog cholera*.—If condemnations of all animals showing signs of hog cholera were strictly carried out, the money loss would be enormous. As a more definite knowledge of this disease and its possible bearing upon human health is desirable, we recommend that studies be carried out to determine at what stages of the disease or of convalescence the carcass of an affected animal is fit or unfit for food, and that the regulations be revised if necessary to accord with the results of such investigations.

3. *Inspectors in charge*.—The success of the service depends largely on their knowledge of the multitude of details in the various establishments, as well as upon their ability to handle tactfully the many difficult situations in connection with the packing houses. They must often plan the improvements to be made. It is important that the inspectors in charge should be thoroughly practical men and if possible well informed on methods of constructing slaughter and process houses. The improvements recommended should be followed by helpful suggestions and sometimes with detailed directions for the work. The chief inspectors whom we have met attribute much of their success in bettering the conditions of the slaughter-houses to their ability to plan the reconstruction work.

4. *Equipment, facilities, etc.*—In the improvements which are being made in the packing houses there seems to be a lack of uniformity in much of the equipment put in and in the changes being made relative to kind of floors, walls, paint, trucks, and material for making tables on which are handled meats, sausages, etc. We recommend a careful study of the various materials, paints, etc., to determine those best adapted for the needs of the service, as necessarily modified by climate and possibly other local conditions. The fairly extensive use of trucks made entirely of metal for meat products was observed. For most purposes these seem to be the most suitable and sanitary, and their more general use is recommended. Wooden trucks are permissible when made of hard wood and kept free from cracks and loose joints.

The attitude of the operatives with regard to cleanliness, self-respect, etc., is largely influenced by their surroundings. We feel that much good could be accomplished by requiring the construction of proper facilities in the houses which are now deficient, and insisting on proper care of them in use. Washbasins with hot and cold water should be provided outside the toilet rooms, on the working floor where the employee is in full sight not only of the superintendent but of other workers in that department. It is best to have washbasins both in the toilet rooms and outside. This arrangement now exists in several houses, and inspectors as well as the superintendents say that it is more effective in securing cleanliness than the plan of having basins or sinks within the toilet rooms only. In those houses which employ janitors this does not seem to be so necessary. We recommend the more general employment of janitors for toilet and dressing rooms.

¹ Note by the Department of Agriculture.—This recommendation was adopted in the revised meat-inspection regulations (B. A. I. Order 211).

Signs enjoining cleanliness and the observance of sanitary habits should be more generally used about official establishments. We recommend that the department specify signs of uniform style for this and other purposes.

Roller towels should not be used.

It is suggested that packers be required to have laundry facilities for the outer clothing of employees where they employ 15 or more men. The securing of clean clothing for the workmen and the arranging of suitable dressing rooms and lockers and keeping them clean are very important.

5. *Grading system.*—From what has been said above, it is evident that the slaughter and packing houses might be divided into several grades, ranging from those in which the buildings, equipment, and methods are first class in every respect, down to those which are unsatisfactory in one or all of these points, but which can not be justly condemned entirely. Under the present system the Government gives the same certification to the products of all these establishments. We consider this unfair to the consumer as well as to the first-class establishments. We therefore recommend the adoption of a scoring system similar to that now employed in grading dairies. We believe that this will go far toward removing the present unfairness, and will also exercise a most beneficial and stimulating effect on all classes of houses, and make it easier for the Federal inspection service to bring about the desired betterments in the poorer houses.

6. *Kosher killing.*—While it may be necessary to permit the methods of killing animals required by the religious rites of the Jewish people, it is suggested that as many as possible of the cruelties of the Kosher killing be abolished. It would seem that more humane methods could be followed and still not infringe upon the Mosaic laws. In Boston, we are told, much has been accomplished in this direction.

7. *Committee on improvements.*—The improvement of the packing houses and the establishing of a satisfactory system of inspection must of necessity require much time. The best arrangement of equipment, the most desirable materials to be used, and many other things pertaining to the packing-house business are as yet known only in part. Until more definite knowledge on these subjects is acquired, the best possible conditions can not be attained. For this reason we recommend that a committee be appointed to study and to try out various suggestions to improve the service. It is difficult to see how certain details can be effectively improved unless there is some provision for ascertaining what is the best to be recommended.

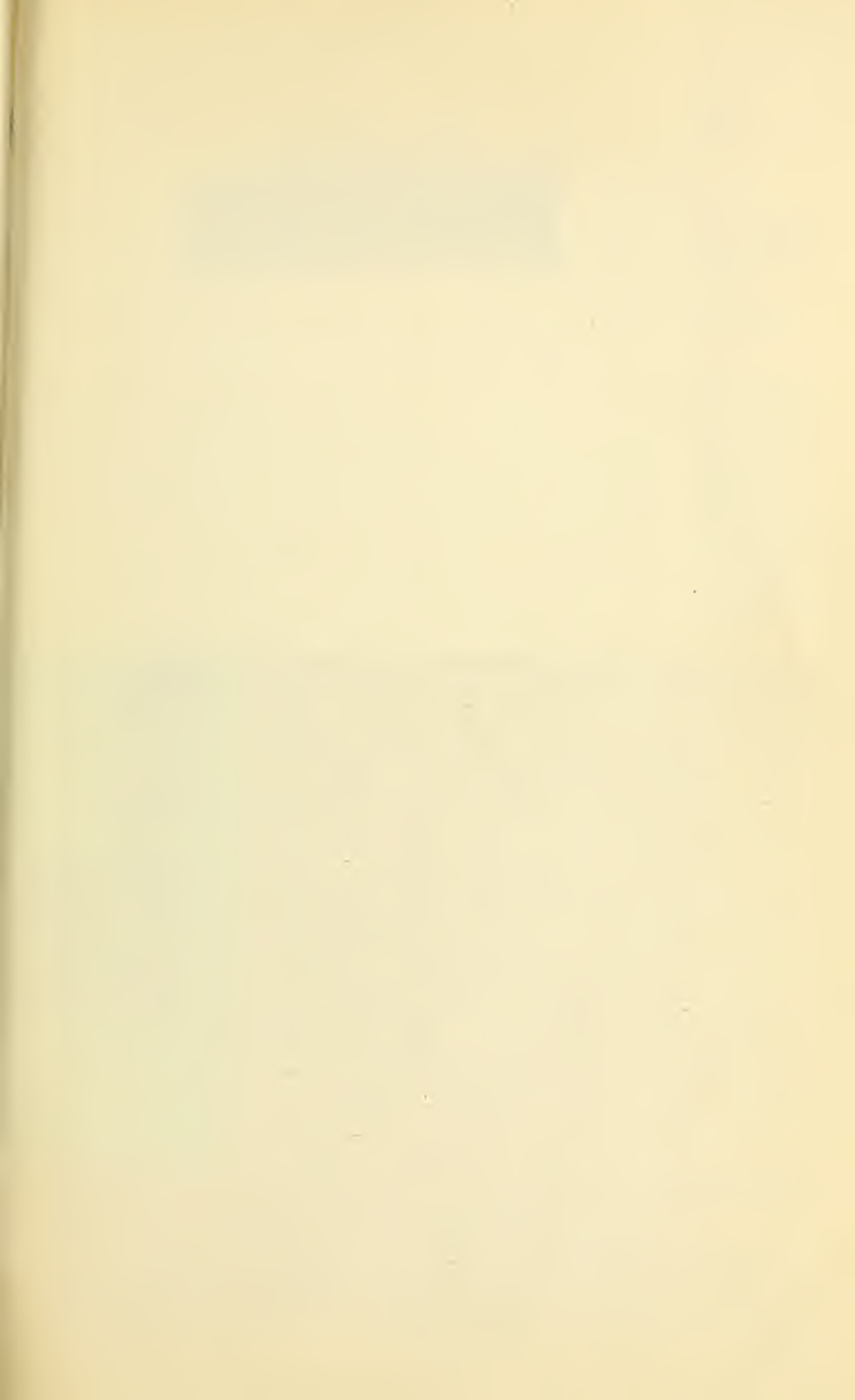
8. *State and municipal inspection.*—The criticism of the Federal meat-inspection service that is often made comes in the form of this inquiry: "Why should the Government spend so much money for meat inspection and be so severe with the packers when they kill but 60 per cent of the meat consumed, and when the other butchers can kill and sell what they like and in as filthy a place as they choose?" To overcome this, it is suggested that the department present to the proper State and municipal authorities a statement of fact with the recommendation that each State establish a meat-inspection service to safeguard its people against unwholesale meat. It is believed that the good auspices of the Federal Government in this matter would encourage the States to do their part in this commendable work. We believe that the powers of the Government in this respect are not

generally understood. The Federal meat-inspection law applies solely to establishments engaged in interstate traffic and to meats which are handled in interstate trade. For these reasons the Federal authorities can not interfere with establishments the business of which is restricted to the State in which they are located. Because butchering is an unpleasant and more or less dirty task, the surroundings should be such as to counteract this to the greatest extent possible and to safeguard the product.

9. *Publication of facts.*—We have been reminded many times during our inspection work of the many criticisms that have been made of the Federal meat-inspection service. We have not been told by anyone outside of the service of the good work that is being done by the inspectors in safeguarding the people against bad and diseased meat and of the improvements they have brought about in handling meat and meat products. There is not a general understanding of what is being done, nor of the problems to be solved. The general public is not well informed concerning the prevalence of disease in food-producing animals, nor of the extent to which the diseases render the flesh of such animals wholesome or unwholesome. The problem which confronts the Federal meat-inspection service is to provide a safe and wholesome meat food supply which is within the financial reach of the people. While the esthetic side is important, a sufficient supply of safe meat food is a necessity. In order that this entire question may be placed before the people, it is recommended that the department encourage the publication of popular articles on meat inspection that will inform the public of the facts pertaining to diseased meat and the work that the department is doing. The truth should be known. It would bring relief to the skeptical and much credit to the Federal meat-inspection service.

MAZÏCK P. RAVENEL.
VERANUS A. MOORE.

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